Appendix A

Air Quality Conformity Analysis

FINAL DRAFT

Conformity Analysis Report and Conformity Determination For The Greensboro Urban Area 2030 Long Range Transportation Plan

August 20, 2004

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Transportation Planning Branch

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and

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Greensboro Metropolitan Planning Organization Conformity Analysis Report

Executive Summary

The purpose of this report is to comply with the provisions of the Clean Air Act Amendments of 1990 and the Transportation Equity Act for the 21st Century. It demonstrates that the fiscally constrained long-range transportation plan of the Greensboro Metropolitan Planning Organization eliminates or reduces violations of the national ambient air quality standards (NAAQS) in Guilford County. The plan accomplishes the intent of the North Carolina State Implementation Plan (SIP). This conformity determination is based on a regional emissions analysis that uses the transportation network approved by the Greensboro Urban Area for the 2030 Transportation Plan and the emissions factors developed by the North Carolina Department of Environment and Natural Resources (NCDENR). Based on this analysis, the Greensboro Metropolitan Planning Organization Transportation plan conforms to the purpose of the North Carolina SIP.

Guilford County was originally declared non-attainment for ozone (O_3) on January 6, 1992. At that time, Guilford County was classified as moderate nonattainment for ozone. On November 8, 1993 Guilford County was redesignated to maintenance for ozone.

The conformity determination is based on the Greensboro Metropolitan Planning Organization long range transportation plan. The transportation plan is analyzed for 2004, 2014, 2020 and 2030. Each analysis year includes expected population and employment data and roadway and transit projects that should be open. The plan is fiscally constrained and funding sources are identified to the extent possible. Table 1 summarizes the conformity requirements of 40 CFR Part 51 and 93 and gives the status of the Greensboro Metropolitan Planning Organization long range transportation plan in relation to each of these requirements.

Table 1: Summary of Status of Conformity Requirements

Criteria	Plan Meets	Plan Does Not Meet
Consistent with Emissions Budget(s)	v	
TCM Implementation[1]	n/a	
Interagency Consultation	v	
Latest Emissions Model	v	
Latest Planning Assumptions	v	
Fiscal Constraint	v	

NCDENR prepared base and future emission rates for the vehicle fleet using Mobile 6.2. These rates were applied to VMT from the Greensboro Metropolitan Planning Organization travel demand model. Table 2 in this section is a summary of the emissions budget comparison.

[1] The NC SIP includes no TCMs related to this MPO.

Table 2:

a) Emissions Comparison Summary

Guilford Emissions Comparison (kg/day)[2]				
	NO_X		VOC	
Year	SIP Emissions (KG/Day)	Long Range Plan Emissions (KG/Day)	SIP Emissions (KG/Day)	Long Range Plan Emissions (KG/Day)
2004(Old SIP)	37,430	29,310	22,290	17,711
2004*	30,871	29,202	18,334	17,010
2007	24,748	22,605	15,921	14,027
2010	18,243	16,008	12,991	11,044
2012	14,914	13,152	11,884	9,819
2014	14,914	10,297	11,884	8,594
2015	11,050	9,612	10,578	8,273
2020	11,050	6,192	10,578	6,668
2030	11,050	4,584	10,578	5,700

b) Emissions Comparison Summary

Entire Davidson County Emissions Comparison (kg/day)				
	NO_X		VOC	
Year	SIP Emissions (KG/Day)	Long Range Plan Emissions (KG/Day)	SIP Emissions (KG/Day)	Long Range Plan Emissions (KG/Day)
2004(Old SIP)	11,104	10,484	7,321	5,626
2004*	11,594	11,155	5,888	5,835
2007	9,516	8,758	5,234	4,790
2010	7,067	6,361	4,291	3,745
2012	5,770	5,230	3,973	3,364
2014	5,770	4,100	3,973	2,982
2015	4,282	3,810	3,574	2,863
2020	4,282	2,359	3,574	2,265
2030	4,282	1,712	3,574	1,980

*The emission comparison for the submitted new 2004 budget is for informational purposes only since the budget has not yet been approved.

[2] To obtain tons per day divide kilograms per day by 907.18474

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Conformity Determination and Analysis for Greensboro Metropolitan Planning Organization 2030 Long Range Transportation Plan

1. Introduction

The purpose of this report is to comply with the provisions of the Clean Air Act Amendments of 1990 (CAAA) and the Transportation Equity Act for the 21st Century. It demonstrates that the fiscally-constrained long range transportation plan for the Greensboro Metropolitan Planning Organization (GMPO) eliminates or reduces violations of the national ambient air quality standards (NAAQS) in Guilford County and accomplishes the intent of the North Carolina State Implementation Plan (SIP). This conformity determination is based on a regional emissions analysis that uses the transportation network approved by the GMPO for the 2030 Transportation Plan and the emissions factors developed by the North Carolina Department of Environment and Natural Resources (NCDENR). All Federally funded projects in the areas designated by the United States Environmental Protection Agency (USEPA) as air quality non-attainment or maintenance areas must come from a conforming long range transportation plan and transportation improvement program (TIP). In addition, the United States Department of Transportation (USDOT), specifically, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), must make a conformity determination on the MPO Plan and the TIP in all non-attainment and maintenance areas.

In order to assist the Greensboro MPO in making a conformity determination on the adopted 2030 fiscally constrained long range transportation plan, the Transportation Planning Branch of the North Carolina Department of Transportation (NCDOT) performed a systems level conformity analysis of the 2030 transportation plan. This analysis is consistent with the most recent rule cited as "Transportation Conformity Rule Amendments for the New 8-hour Ozone and PM2.5 National Air Quality Standards and Miscellaneous Revisions for Existing Areas; Transportation Conformity Rule Amendments – Response to Court Decision and Additional Rule Changes," effective August 2, 2004 (69 FR 40003). **Based on the regional emissions budget test documented in this report and compliance with other requirements for conformity the GMPO 2030 Transportation Plan conforms to the purpose of the North Carolina SIP.** This report documents the regional emissions budget test, interagency consultation process, public involvement process, and analysis methodology used to demonstrate transportation conformity.

40 CFR Part 93 requires that a conforming transportation plan satisfy five conditions:

- ⇒ The transportation plan must be consistent with the motor vehicle emissions budget(s) in an area where the applicable implementation plan submissions contains a budget (40 CFR Part 93.118),
- ⇒ The transportation plan, TIP or FHWA/FTA project not from a conforming plan must provide for the timely implementation of TCMs from the applicable implementation plan (40 CFR Part 93.113b),
- ⇒ The MPO must make the conformity determination according to the consultation procedures of 40 CFR Part 93.105
- ⇒ The conformity determination must be based on the latest emissions estimation model available (40 CFR Part 93.111),
- ⇒ The conformity determination must be based on the latest planning assumptions (40 CFR Part 93.110).

The GMPO transportation plan meets each of these conditions as summarized in Table 1. Each condition is discussed in greater detail in the following sections of the report.

2. Air Quality Planning

Guilford County was originally declared non-attainment for ozone on January 6, 1992. Subsequently Guilford County was redesignated to maintenance for ozone on November 8, 1993. The redesignation was based on monitoring data from 1989 through 1992 and a demonstration of maintenance of the standard until 2004. . The maintenance plan updates includes emissions budgets for 2004, 2007, 2010, 2012 and 2015. This report includes the USEPA direct final rule for ozone in Appendix A.

2.1. Emissions Budgets

The North Carolina Department of Environment and Natural Resources prepared emissions budgets at the county level for their maintenance demonstration for the Triad. These county level budgets, as well as the Federal Register notice of redesignation, are included in Appendix A.

Table 3: Daily Volatile Organic Compounds Budget

Year	Davidson		Guilford	
	TPD	KG/D	TPD	KG/D
2004(Old SIP)	8.07	7,321	24.57	22,290
2004*	6.49	5,888	20.21	18,334
2007	5.77	5,234	17.55	15,921
2010	4.73	4,291	14.32	12,991
2012	4.38	3,973	13.10	11,884
2014	4.38	3,973	13.10	11,884
2015	3.94	3,574	11.66	10,578
2020	3.94	3,574	11.66	10,578
2030	3.94	3,574	11.66	10,578

Table 4: Daily NO_X Budget

Year	Davidson		Guilford	
	TPD	KG/D	TPD	KG/D
2004(Old SIP)	**12.24**	11,104	**41.26**	37,430
2004*	12.78	11,594	34.03	30,871
2007	10.49	9,516	27.28	24,748
2010	7.79	7,067	20.11	18,243
2012	6.36	5,770	16.44	14,914
2014	6.36	5,770	16.44	14,914
2015	4.72	4,282	12.18	11,050
2020	4.72	4,282	12.18	11,050
2030	4.72	4,282	12.18	11,050

*: The emission comparison for the submitted new 2004 budget is for informational purpose only at this time since it hasn't been approved yet.

The analysis documented in this report applies to the Greensboro and High Point Metropolitan Planning Organizations. The emissions budgets used in this analysis are for Guilford County and Davidson County North Carolina. The emissions analysis accounts for transportation projects from both the Greensboro, High Point and Burlington-Graham Long Range Transportation Plan. This report specifically applies to the Greensboro Long Range Transportation Plan. The emissions budgets used in the comparison are the sum of the Guilford County Emissions budget and entire Davidson County Emissions budget.

3. Long Range Transportation Plan

The 2030 Long Range Transportation Plan for GMPO is an update of the previous long-range transportation plan for the Greensboro Urban Area. The socioeconomic data and fiscal constraint elements of this LRTP include forecasts to 2030. The GMPO approved the socioeconomic estimates on August 25, 1999, with interim adjustments performed in February of 2003, to more accurately reflect development that had occurred or been approved since the original 1994 data collection and forecasts. New and rigorous cost estimation and revenue forecasts were prepared for the revised LRTP, to ensure it is fiscally constrained.

3.1. Consultation

This report was reviewed by NCDENR as specified in the North Carolina Administrative Code (NCAC Title 15A Subchapter 2D Sections .2001 - .2005 inclusive). NCDENR submitted comments on the draft version of the conformity report. These comments were incorporated into the final report. The NCDENR comments and any responses to them are included in Appendix G.

The conformity analysis documented in this report was the subject of interagency consultation as described in the Greensboro Memorandum of Agreement for Interagency Consultation. An initial interagency consultation meeting for this analysis was held in Greensboro, North Carolina on December 4, 2003. Representatives of the Greensboro MPO, High Point MPO, Winston-Salem MPO, Piedmont Triad RPO, NCDOT, NCDENR, EPA, and FHWA were physically present at the meeting.

REGIONAL SIGNIFICANT CHECKLIST

1. The facility serves regional transportation needs (i.e. facilities that provide access to and from the region or that provide access to major destinations in the region);

2. The facility is functionally classified higher than a minor arterial (minor arterials may be regionally significant if their main purpose is to provide access to major facilities in the region);

3. The facility is a fixed guideway transit facility; and

4. The facility is included in the travel model for the region (In many cases collector streets are modeled that are not regionally significant).

To be regionally significant a facility should meet one or more of the criteria in this checklist. *40 CFR Part 93.101

3.2. Financial Constraint

The Greensboro Metropolitan Planning Organization Long Range Transportation Plan is fiscally constrained to the year 2030. All projects included in the current 2004-2010 TIP are fiscally constrained and funding sources have been identified for construction and operation. The estimates of available funds are based on historic funding availability and include federal, state, and local funding sources. The transportation networks assumed in each analysis year are balanced with available funds. These transportation networks are described in the Greensboro Metropolitan Planning Organization Long Range Transportation Plan. In the event of a conformity lapse the exempt projects noted in the conformity determination report would be the Transportation plan for the area during the conformity lapse.

3.3. Latest Planning Assumptions

The 2030 Greensboro Metropolitan Planning Organization transportation plan was developed with the latest planning assumptions as discussed in 40 CFR Part 93.110. Population and employment were initially developed for 1994 based on a "windshield" survey of the planning area. With the release of the 2000 census, however, it was discovered that the previous forecasts substantially underestimated the growth in the area. To compensate, the census data, together with employment data collected from InfoUSA, were used to update socio-economic data for 2000. Population, household, and employment forecasts for 2014 and 2025 were revised to be consistent with these observed differences in development and growth trends. These forecasts reflect a combination of the original Existing Trends Land Use Scenario and more recent estimates published by the North Carolina State Data Center. The Greensboro TAC adopted the Socioeconomic data on August 26, 2004. See resolution in Appendix K.

Trip productions and attractions (as well as the through trip table) for the current (2004) LRTP update were derived by interpolation between the 2000 and 2014 data described above. Future year data are derived from these updated forecasts as well. The 2014 population and employment are unchanged from the updated forecast, other than to reflect significant unanticipated growth associated with the recently-approved Reedy Fork Ranch development along US 29 north. The 2020 values were linearly interpolated from the 2014 and 2025 forecasts described above, with the addition of the Reedy Fork growth. The 2030 values were extrapolated using the same growth rates developed in the update process.

The GMPO travel demand model is based on the four-step modeling process: trip generation, trip distribution, mode choice, and trip assignment.

Mode choice, which predicts the amount of travel that will be made by each mode of transportation, was not developed for the Triad Regional Model. Existing ridership levels in the Piedmont Triad were considered too low to warrant development of a predictive mode split model. Instead, the transit model follows the same methodology as the highway model. Although this is not a predictive model, it represents the distribution of a target ridership, expansion of existing routes, addition of new routes, potential captive ridership areas, and the resulting impacts on existing and proposed roadway systems. Transit trip generation was restricted to zones adjacent transit routes. Ridership information for each route was collected from each MPO for validation and calibration purposes.

The trip generation and trip distribution models were calibrated using the TRIAD origin destination survey conducted in 1994. The network assignment and transit assignment were validated using traffic counts and transit ridership counts for 1994. Traffic assignment was re-validated to 2002 counts using a 2002 interpolated model assignment, obtained in the same manner described above.

There are no court orders or special agreements that apply to conformity in the Greensboro Metropolitan Planning Organization (40 CFR Part 93.109).

3.4. Future Year Roadway Networks

The future year roadway networks used in the conformity analysis were developed as part of the recent update to the GMPO Long Range Transportation Plan. Local staff, together with the state and outside consultants developed a plan to address the future transportation needs of the area. These recommendations underwent public comment, and are financially constrained. Estimated project costs were balanced against anticipated revenue streams to identify a likely and feasible street network for each analysis year.

3.5. Future Transit Networks

The base transit network (1994) was modeled assuming existing 1994 transit routes and ridership. Analysis for the future year (2025) concludes total transit ridership to be 1.7% of vehicle trips (converted to person trips). The 2025 transit analysis assumes continuation of existing transit routes without significant expansion of regional routes. The expansion of regional routes will be addressed in the new Triad Regional Model analysis that is now under analysis. The major hubs in the Triad Region are proposed to be the Winston-Salem Transit Center, Greensboro Multi-Modal Center, High Point Transit Center and Triad Airport.

The future year ridership is based on the Trend Land-Use projections not to exceed 1.7% of total vehicle trips (converted to person trips). Total estimated daily ridership for the Triad Region is 69,000 riders for the design year 2025. It is assumed that the continuation of historical growth patterns will continue to support existing routes, but will not be conductive to significant expansions in regional service.

As required in 40 CFR 93.106, all transit projects in the future (2014, 2020 and 2030) are fiscally constrained.

3.6. Trip Generation

Trip generation is performed using the NCDOT's Internal Data Summary (IDS) program. IDS is a regression type trip generation model that estimates trip productions using five housing classifications per analysis zone and one trip rate per housing classification. The household classifications are determined during a "windshield" survey of the planning area. The windshield survey includes a 100 percent look at the dwelling units within the planning area. Trip attractions are estimated based on the number and type of employees in an analysis zone and the number of commercial vehicles garaged in the analysis zone.

The Triad Regional Travel Demand Model uses eight trip purposes: rural home-based work, urban home-based work, rural other home-based, urban other home-based, nonhome-based, external-internal, truck, and external-external or through trips. Productions and attractions are individually constrained with productions balanced to match attractions by both IDS and later in the gravity model.

3.7. Trip Distribution

The Triad Regional Travel Model uses a standard gravity model to distribute trips. The model builds zone to zone trip tables (by purpose) using a weighted sum of travel time and distance. For assignment purposes the individual trip tables are aggregated into a single trip table for each analysis year (2004, 2014, 2020 and 2030).

3.8 Mode Choice and Transit Assignment

The transit model is an essential part of long-range transportation planning for the Greensboro 2030 Transportation Plan. The transit model was developed based on existing transit routes and ridership. The TAZ's adjacent to the transit routes were identified and analyzed with regards to lower income housing and employment opportunities. The base year (1994) transit model was then tested for accuracy, loaded and calibrated to within 100 person-trips of the actual route ridership.

Future year transit routes are described briefly in Section 3.5 above. The future year transit system includes high speed, high capacity transit service mostly on exclusive right-of-way, with some in-traffic operation in the Central Business Districts. The future year transit network will include additional bus service to support the high speed, high capacity transit system and to operate in the area between the high demand corridors. These buses operate on the streets with travel time dependent on the network speeds from the model. The Transit system will be addressed in the new Triad Regional Model analysis that is now under analysis.

3.9 Highway Assignment and Vehicle Miles Traveled

The Triad Regional Travel Model uses an equilibrium assignment method. This method assigns vehicle trips based on equalizing the capacity on the network links. After the vehicle trips are assigned, the fiscally constrained networks are used as input into Truespeed. Truespeed is a post processor that calculates link travel speeds based on assigned traffic volume, number of through lanes, and number of signals per mile. Truespeed is based on Chapters 3 and 11 of *The Highway Capacity Manual*. The vehicle miles traveled (VMT) and travel speeds used for this conformity analysis were calculated and aggregated by functional classification during the Truespeed run.

Table 5 displays Summary Statistics for the Triad Regional Travel Model for both the Greensboro and High Point urban areas.

Table 5: Model Summary Statistics

Horizon Year	Guilford County VMT	Population	Employment
2004	14,850,059	406,603	272,481
2010	16,404,995	443,781	292112
2014	17,441,622	482,837	305,200
2020	20,052,414	520,147	328,190
2030	23,234,079	585,437	368,897

4. Regional Emissions Budget Test

In areas with an USEPA approved attainment demonstration of maintenance plan, an emissions budget comparison satisfies the emissions test requirement of 40 CFR Part 93.118. For pollutants for which an emissions budget has been approved, the estimated emissions from the transportation plan must be less than or equal to the emissions budget values. The results of the emissions analysis for each pollutant are shown in Table 6 (NOx) and Table 7 (VOC) below. NCDENR provided the emissions factors used in this analysis.

Table 6: Daily NOx Emission Comparison

Guilford & Davidson Counties Emissions Comparison (kg/day)				
	Guilford County NO_X		Davidson County NO_X	
Year	SIP Emissions (KG/Day)	Long Range Plan Emissions (KG/Day)	SIP Emissions (KG/Day)	Long Range Plan Emissions (KG/Day)
2004(Old SIP)	37,430	29,310	11,104	10,484
2004*	30,871	29,202	11,594	11,155
2007	24,748	22,605	9,516	8,758
2010	18,243	16,008	7,067	6,361
2012	14,914	13,152	5,770	5,230
2014	14,914	10,297	5,770	4,100
2015	11,050	9,612	4,282	3,810
2020	11,050	6,192	4,282	2,359
2030	11,050	4,584	4,282	1,712

*: The emission comparison for the submitted new 2004 budget is for informational purpose only at this time since it hasn't been approved yet.

Table 7: Daily VOC Emission Comparison

Guilford & Davidson Counties Emissions Comparison (kg/day)				
	Guilford County VOC		Davidson County VOC	
Year	SIP Emissions	Long Range Plan Emissions	SIP Emissions	Long Range Plan Emissions
2004(Old SIP)	22,290	17,711	7,321	5,626
2004*	18,334	17,010	5,888	5,835
2007	15,921	14,027	5,234	4,790
2010	12,991	11,044	4,291	3,745
2012	11,884	9,819	3,973	3,364
2014	11,884	8,594	3,973	2,982
2015	10,578	8,273	3,574	2,863
2020	10,578	6,668	3,574	2,265
2030	10,578	5,700	3,574	1,980

*: The emission comparison for the submitted new 2004 budget is for informational purpose only at this time since it hasn't been approved yet.

4.1. Emissions Model

NCDENR used MOBILE 6.2 to develop the emissions factors. Motor vehicle emissions controls considered in the MOBILE model are an inspections and maintenance program (as required in the North Carolina SIP). Area specific information such as vehicle age distribution and vehicle type distribution was used rather than national default values.

4.1.1. Development of Emissions Factors

A critical element of any emissions analysis is the development and utilization of the emissions factors applied to the travel estimates. In order to assure that the emissions factors used in the conformity analysis were compatible with those used in the development of the North Carolina SIP, NCDENR provides emission factors and model inputs for each maintenance area in North Carolina. The Mobile 6.2 emissions factor model was used to develop the emissions factors in April 2004. The MOBILE 6 input files for this effort are included in Appendix C.

NCDENR provides motor vehicle emissions factors by federal functional classification. In addition the percentage of motor vehicles subject to the inspection and maintenance program is estimated from accident data. The scope of North Carolina's motor vehicle inspection and maintenance program is set to expand from nine counties to forty-eight counties by 2007. The phase of the I&M program is reflected in Table 8.

Table 8: Percent of Vehicles Subject to I&M in Guilford and Davidson Counties

County	2004	<2030
Guilford	81	96
Davidson	89	96

4.1.2. Development of VMT mix for Mobile6 model:

The North Carolina Department of Transportation (NCDOT) provides data on VMT for six urban and six rural road types; vehicle mix data are available for the same road types. Automatic traffic recording stations and selected Highway Performance Monitoring System (HPMS) locations were used and counts taken throughout 1999 - 2001 are used to determine the percentage of vehicles, by vehicle type, for various road types. Vehicle classification data was used in conjunction with Mobile6 default vehicle mix to estimate fleet distribution by functional class. The classification data was iteratively adjusted to replicate Mobile6's national classification default within the analysis area. The final numbers reflect the change in the mix (i.e. increase in the number of SUVs and pick-ups) for each year using Mobile6 projection and variation of mix across the different road type using NC data. This reflects 16 vehicle classes per road type.

4.1.3. Vehicle Age Distributions

The vehicle age distribution is based on the North Carolina Department of Motor Vehicles' (DMV) registration records for the in-use fleet, in the Triad area, which includes Davidson County. DMV provided the information in calendar 2000 for model years 1974 to 2000. The data was modified and arranged to comply with Mobile6.2

4.2. Transportation Control Measures

The North Carolina State Implementation Plan lists no transportation control measures pertaining to this maintenance area.

4.3. Off-Model Analysis

A number of projects in this urban area fall outside the scope of traditional travel demand modeling. Their effect on emissions is accounted for by off-model calculations. FHWA Region IV's *Off-Model Air Quality Analysis: A Compendium of Practice* provided guidance on estimating emissions effects of these projects. The effects of these projects are included in the final conformity number shown in Table 2. All projects requiring off-model analysis are listed in Table 9.

The GMPO Long Transportation Plan will contain additional documentation on transit and paratransit improvements. The plan accounts for the continuation of exisiting transit, vanpool, and ridership programs. The Piedmont Authority of Regional Transportation (PART) is responsible for vanpool and ridership programs in the Triad region, which includes Burlington, Greensboro, and Winston-Salem. Greensboro's local transit authority, GTA (Greensboro Transit Authority), administers the local transit program. Current funding levels are as follows: $6,649,000 for capital expenses, and $9,872,555 for operating expenses.

4.3.1. Transit Improvements

In order to calculate the daily VMT reduction attributable to transit, the average trip length was multiplied by the total number of vehicles removed from the system. The vehicles removed from the system were determined by dividing the estimated ridership by the average vehicle occupancy rate (VOR). The average VOR was assumed to be 1.31 persons per vehicle. This estimate assumes a 1.46 percent annual growth rate for transit riders and an average transit trip length gradually from nine miles per rider to ten miles per rider.

As noted in section 3.5, transit ridership makes up 1.7% of total trips.

4.3.2. Vanpool

In order to calculate the daily VMT reduction attributable to vanpools, the average round trip commute length per vehicle was multiplied by the total number of vehicles removed from the system. The vehicles removed from the system were determined by dividing the estimated ridership by the average vehicle occupancy rate (VOR). The average VOR was assumed to be 1.35 persons per vehicle. Total ridership was estimated by assuming 5.5 vanpools beginning in 2004 and increasing to 57.5 in 2030, with an average of 12 riders per van. The average trip length for a Vanpool rider is assumed to range from nine to ten miles depending upon the year of the analysis.

4.3.3. ITS

Table 9 lists the projects that required off-model calculations. For all these projects, it was assumed that incident detection and response has 50% effectiveness. It was assumed that emissions caused by nonrecurring congestion accounts for 4.9% of total emissions. The incident management system is assumed to affect only the freeway and is expected to encompass nearly the entire freeway system in 2020 and 2030.

Table 9: Projects Requiring Off-Model Calculations of Emissions by Off-Model Analysis

TIP No. or Responsible Agency	Description	First Analysis Year
Piedmont Authority for Regional Transportation (PART)	Continuation of existing vanpool and ridership programs	2004
HiTRan (High Point Transit)	Continuation of existing transit program	2004
Greensboro Transit Authority (GTA)	Continuation of existing transit program	2004
I-2201F	Freeway Surveillance Associated with this Project	2004
I-2402	Freeway Surveillance Associated with this Project	2004
R-0609	Freeway Surveillance Associated with this Project	2014
R-0984	Freeway Surveillance Associated with this Project	2004
U-2524	Freeway Surveillance Associated with this Project	2014
U-2525A	Freeway Surveillance Associated with this Project	2004
U-2525B	Freeway Surveillance Associated with this Project	2014
U-2525C	Freeway Surveillance Associated with this Project	2020
TIP - unfunded	Freeway Surveillance Associated with this Project (I-85 - Elon College Exit to NC 6)	2014
TIP - unfunded	Freeway Surveillance Associated with this Project (I-85 - NC 6 to US 220)	2014
TIP - unfunded	Freeway Surveillance Associated with this Project (I-40 - I-85 to High Point Road)	2014
TIP - unfunded	Freeway Surveillance Associated with this Project (US 220 - I-40 to US 70)	2014
TIP - unfunded	Freeway Surveillance Associated with this Project (I-85 Business -Split to Guilford/Randolph Line)	2020
TIP - unfunded	Freeway Surveillance Associated with this Project (US 220 - I-40 to Guilford/Randolph Line)	2020
TIP - unfunded	Freeway Surveillance Associated with this Project (US 220 - Loop to NC 68)	2020
TIP - unfunded	Freeway Surveillance Associated with this Project (US 421 - I-85/I-40 to Guildford/Randolph Line)	2020
R-2606	Freeway Surveillance Associated with this Project	2014

4.3.4. Park and Ride

In order to calculate the daily VMT reduction attributable to park and ride facilities, the average round trip commute length per vehicle was multiplied by the total number of vehicles removed from the system. The vehicles removed from the system were determined by multiplying the number of spaces in the lot by the estimated utilization, which was assumed at 90%. This calculation assumes a park and ride system growing from zero in 1994 to 2000 spaces in 2020 and remaining constant thereafter. Average trip length for the park and ride system is assumed to be between five and six miles per user.

4.4. Analysis Outside the Modeled Area

The Triad Regional Model covers all of Guilford County. All projects in the Greensboro Long Range Transportation Plan are included in the Triad Regional Model.

4.5. Budget Test By Pollutant

The GMPO is a maintenance area only for ozone. USEPA approved the SIP re-designating Guilford and Davidson Counties to maintenance for ozone on November 8, 1993. The Federal Register notice containing the summary emissions budget is included in Appendix A. In addition the actual pages from the maintenance plan detailing the emissions budget are included in Appendix A. Ozone has two precursors oxides of nitrogen (NOX) and volatile organic compounds (VOC).

That original maintenance plan included emissions budgets for 1999, 2002, and 2004. 40 CFR Part 93. 106 requires that transportation emissions be estimated at, maximum, ten year intervals beginning with the base year of the travel demand model. For this analysis travel model runs were made for 2004, 2014, 2020, and 2030. Emissions for 2007,2012 and 2015 are interpolated. The maintenance plan update includes emissions budgets for 2004, 2007, 2010, 2012 and 2015. 40 CFR Part 93.106 requires that transportation emissions be estimated at, maximum, ten year intervals beginning with the base year of the travel demand model.

5. Public Involvement and Interagency Consultation

Public review of this report was handled in accordance with the Greensboro Urban Area public participation policy for Transportation Plans. A copy of the public participation policy is included in Appendix H. Comments from the public participation process are incorporated into the final Conformity Analysis and Determination Report. Those comments that are written are included in Appendix I of the final report.

6. Conclusion

Based on the analysis and consultation discussed above the proposed 2030 GMPO transportation plan conforms to the purpose of the North Carolina State Implementation Plan. In every analysis year for every pollutant, the emissions expected from the implementation of the long range plan are less than the emissions budget for Guilford and Davidson Counties approved in the Maintenance Plan.

APPENDIX A: Federal Register SIP Notice and Emissions Budgets

ten years following the initial ten-year period. To provide for the possibility of future NAAQS violations, the maintenance plan must contain contingency measures, with a schedule for implementation, adequate to assure prompt correction of any air quality problems.

In this notice, EPA is approving the State of North Carolina's maintenance plan for the Greensboro/Winston-Salem/High Point area because EPA finds that the State of North Carolina's submittal meets the requirements of section 175A.

A. Emissions Inventory—Base Year Inventory

On November 13, 1992, the State of North Carolina submitted comprehensive inventories of VOC, NO_x, and CO emissions from the Greensboro/Winston-Salem/High Point area. The inventories included biogenic, area, stationary, and mobile sources using 1990 as the base year for calculations to demonstrate maintenance. The 1990 inventory is considered representative of attainment conditions because the NAAQS was not violated during 1990. The 1990 Base Year Emission Inventory for the Greensboro/Winston-Salem/High Point area has been submitted to EPA in SIP Air Pollutant Inventory Management Subsystem (SAMS) format.

The State of North Carolina submittal contains the detailed inventory data and summaries by county and source category. This comprehensive base year emissions inventory was submitted in the SAMS format. Finally, this inventory was prepared in accordance with EPA guidance. A summary of the base year and projected maintenance year inventories are shown in the following three tables. Refer to the TSD accompanying this notice for more in-depth details regarding the base year inventory for the Greensboro/Winston-Salem/High Point area.

VOC Emission Inventory Summary
[Tons per day]

	1990	1993	1996	1999	2002	2004
Point	82.30	83.69	74.04	63.42	66.59	68.59
Area	180.76	178.25	179.54	180.67	183.16	184.68
Mobile	88.30	73.91	73.41	73.54	74.06	74.97
Total	351.36	335.85	326.99	317.63	323.81	328.24

NO_x Emission Inventory Summary
[Tons per day]

	1990	1993	1996	1999	2002	2004
Point	23.04	24.14	25.24	26.31	27.23	27.81
Area	0.29	0.29	0.29	0.29	0.29	0.29
Mobile	99.76	100.01	100.40	96.96	91.13	90.28
Total	123.09	124.44	125.93	123.56	118.65	118.38

CO Emission Inventory Summary
[Tons per day]

	1990	1993	1996	1999	2002	2004
Point	5.37	5.51	5.71	5.90	6.06	6.15
Area	40.98	41.00	41.01	41.02	41.03	41.04
Mobile	710.25	612.50	601.28	593.39	601.53	612.92
Total	756.60	659.01	648.00	640.31	648.62	660.11

B. Demonstration of Maintenance—Projected Inventories Total VOC, NO_x, and CO emissions were projected from the 1990 base year out to 2004. These projected inventories were prepared in accordance with EPA guidance. Refer to EPA's TSD accompanying this notice for more in-depth details regarding the projected inventory for the Greensboro/Winston-Salem/High Point area. The projections indicate that VOC and CO emissions decrease steadily from 1990 through 2004. However, the projections show an increase over the 1990 NO_x level of 1.10% in 1993, 2.31% in 1996, and 0.38% in 1999. To date, this level of increase in NO_x has not caused a violation of the NAAQS. EPA believes that the emissions projections demonstrate that the area will continue to maintain the O_3 NAAQS because this area achieved attainment through VOC controls and reductions. The projected emission inventories were submitted in the SAMS format.

C. Verification of Continued Attainment

Continued attainment of the O_3 NAAQS in the Greensboro/Winston-Salem/High Point area depends, in part, on the State of North Carolina's efforts toward tracking indicators of continued attainment during the maintenance period. The State of North Carolina's contingency plan is triggered by two indicators, an air quality violation or the periodic emissions inventory exceeds the baseline emission inventory by more than 10%. As stated in the maintenance plan, the NCDEHNR will be developing these periodic emissions inventories every three years beginning in 1996. These periodic inventories will help to verify continued attainment. Refer to the TSD accompanying this notice for a more complete discussion of the indicators the State is tracking and the contingency measures.

ENVIRONMENTAL PROTECTION AGENCY

[R04–OAR–2004–NC–0002–200422; FRL–7791–6]

Adequacy Status of the Raleigh/Durham and Greensboro/Winston-Salem/High Point, NC 1-Hour Ozone Maintenance Plan Updates for Transportation Conformity Purposes

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of adequacy.

SUMMARY: In this notice, EPA is notifying the public that EPA has found that the motor vehicle emission budgets (MVEB) in the Raleigh/Durham area (Durham and Wake Counties and a portion of Granville County) and Greensboro/Winston-Salem/High Point area (Davidson, Forsyth, and Guilford Counties, and a portion of Davie County) 1-hour ozone maintenance plan updates, submitted June 4, 2004, by the North Carolina Department of Environment and Natural Resources (NCDENR), are adequate for transportation conformity purposes. On March 2, 1999, the DC Circuit Court ruled that submitted State Implementation Plans (SIPs) cannot be used for transportation conformity determinations until EPA has affirmatively found them adequate. As a result of EPA's finding, the Raleigh/Durham and Greensboro/Winston-Salem/High Point areas can use the MVEB from the submitted Raleigh/Durham area and Greensboro/Winston-Salem/High Point area 1-hour ozone maintenance plan updates, respectively, for future conformity determinations.

DATES: These MVEB are effective August 9, 2004.

FOR FURTHER INFORMATION CONTACT: Matt Laurita, Environmental Engineer, U.S. Environmental Protection Agency, Region 4, Air Planning Branch, Air Quality Modeling and Transportation Section, 61 Forsyth Street, SW., Atlanta, Georgia 30303. Mr. Laurita can also be reached by telephone at (404) 562–9044, or via electronic mail at *laurita.matthew@epa.gov*. The finding is available at EPA's conformity Web site: *http://www.epa.gov/otaq/transp.htm* (once there, click on the ''Transportation Conformity'' text icon, then look for ''Adequacy Review of SIP Submissions'').

SUPPLEMENTARY INFORMATION:

Background

Today's notice is simply an announcement of a finding that EPA has already made. EPA Region 4 sent a letter to NCDENR on June 23, 2004, stating that the MVEB in the submitted Raleigh/Durham area and Greensboro/Winston-Salem/High Point area 1-hour ozone maintenance plan updates submitted on June 4, 2004, are adequate. This finding has also been announced on EPA's conformity Web site: *http://www.epa.gov/otaq/transp.htm*, (once there, click on the ''Transportation Conformity'' text icon, then look for ''Adequacy Review of SIP Submissions''). The adequate MVEB are provided in the following table.

RALEIGH/DURHAM AREA MVEB

[Tons per day]

County	Pollutant	2007	2010	2012	2015
Durham	VOC	8.30	6.77	5.94	5.26
	NO_X	15.29	11.35	9.09	6.49
Granville*	VOC	0.55	0.46	0.41	0.37
	NO_X	1.46	1.13	0.89	0.62
Wake	VOC	20.04	17.36	15.64	14.35

RALEIGH/DURHAM AREA MVEB—Continued

[Tons per day]

County	Pollutant	2007	2010	2012	2015
	NO_X	41.38	29.90	24.41	17.90

*Partial County.

GREENSBORO/WINSTON-SALEM/HIGH POINT AREA MVEB

[Tons per day]

County	Pollutant	2007	2010	2012	2015
Davidson	VOC	5.77	4.73	4.38	3.94
	NO_X	10.49	7.79	6.36	4.72
Davie*	VOC	0.01	0.01	0.01	0.01
	NO_X	0.03	0.02	0.02	0.01
Forsyth	VOC	12.06	9.93	9.12	8.14
	NO_X	19.53	14.49	11.83	8.79
Guilford	VOC	17.55	14.32	13.10	11.66
	NO_X	27.28	20.11	16.44	12.18

*Partial County.

Transportation conformity is required by section 176(c) of the Clean Air Act, as amended in 1990. EPA's conformity rule requires that transportation plans, programs and projects conform to State air quality implementation plans and establishes the criteria and procedures for determining whether or not they do. Conformity to a SIP means that transportation activities will not produce new air quality violations, worsen existing violations, or delay timely attainment of the national ambient air quality standards.

The criteria by which EPA determines whether a SIP's MVEB are adequate for transportation conformity purposes are outlined in 40 Code of Federal Regulations 93.118(e)(4). Please note that an adequacy review is separate from EPA's completeness review, and it also should not be used to prejudge EPA's ultimate approval of the SIP. Even if EPA finds a budget adequate, the Agency may later determine that the SIP itself is not approvable.

EPA has described the process for determining the adequacy of submitted SIP budgets in guidance (May 14, 1999 memorandum entitled ''Conformity Guidance on Implementation of March 2, 1999 Conformity Court Decision''). EPA has followed this guidance in making this adequacy determination. This guidance is incorporated into EPA's June 14, 2004, final rulemaking entitled ''Transportation Conformity Rule Amendments for the New 8-hour Ozone and $PM_{2.5}$ National Ambient Air Quality Standards and Miscellaneous Revisions for Existing Areas; Transportation Conformity Rule Amendments: Response to Court Decision and Additional Rule Changes.''

Authority: 42 U.S.C. 7401–7671q.

Dated: July 14, 2004.

A. Stanley Meiburg,

Acting Regional Administrator, Region 4.

[FR Doc. 04–16832 Filed 7–22–04; 8:45 am]

BILLING CODE 6560–50–P

Appendix B: Discussion of Emissions Budget Development

Emission Budget Development Procedure

The highway mobile source inventory was developed for the North Carolina counties in the Raleigh/Durham and the Greensboro/Winston-Salem/High Point 1-hour ozone maintenance areas. For Granville County, a partial county, the emissions were estimated using vehicle miles traveled associated with the maintenance area only. This data was provided by NCDOT. The estimation of emissions from highway mobile sources involves multiplying an activity level (VMT) by an emission factor. To determine the emission factors, the USEPA's MOBILE6.2 model was used. Based on the information inputted into the model, emission factors were generated for the twelve functional road classes. The activity level is the road class vehicle miles traveled (VMT), which was obtained by the North Carolina Department of Transportation (NCDOT). The emissions were then calculated by multiplying the road class emission factors by the road class VMT.

The highway mobile source projected inventories were created by re-running the MOBILE6.2 model for the future years. By changing the inputs into the model to reflect the year the emissions are being estimated for and any control measures expected to be implemented, the emission factors generated reflected the effects of cleaner vehicles due.

Mobile 6.2 was used to generate VOC, NOx and CO emission factors for each vehicle class and road type. Using a spreadsheet, daily vehicle miles traveled (DVMT) for the summer season were divided by seasonal adjustment factors and then the inspection and maintenance (I/M) and non-I/M fractions were multiplied by the I/M and non-I/M scenario emissions in the spreadsheet to calculate CO, VOC, and NOx emissions. These emissions were calculated for the base year and each of the projection years on a tons per day basis for the TRIAD counties.

Emissions Budgets for SIP

The emissions budgets for carbon monoxide (CO), volatile organic compounds (VOC), and oxides of nitrogen (NOx) were developed as part of the maintenance demonstration for the Triad nonaftainment area. The NOx and VOC emissions budgets were calculated on an episode day basis. These budgets set the limits for motor vehicle emissions to help the area to maintain the public health standards for ten years through 2015. The maintenance plan containing the mobile emission budgets was adopted by the state and approved by EPA into the Official State Implementation Plan. The maintenance plan **was** deemed acceptable for protecting the public health through 2015.

Please refer to the Greensboro/Winston-Salem/High Point Redesignation Package - Mobile Source Emission Estimation for further details of the inputs and calculation methodologies.